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10/726,087	12/02/2003	Young-Ky Kim	678-245 CON	3399
28249 7590 08/22/2007 DILWORTH & BARRESE, LLP 333 EARLE OVINGTON BLVD. SUITE 702 UNIONDALE, NY 11553			EXAMINER LIM, STEVEN	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/726,087	Applicant(s) KIM ET AL.	
	Examiner Steven Lim	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 09/268,242.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-8, 10-16, 19-21, 23-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Odenwalder et al. (US 5909434) in view of Rikkinen et al. (US 6031827).

4. Regarding Claim 1, Odenwalder et al. discloses a transmission device including a first message generator for encoding first input data of a first bit stream to generate a first frame message having a first frame length (frame generator places signaling data of 32 bits into frames, Fig. 2), a second message generator for encoding second input data of a second bit stream longer than the first bit stream to generate a second frame

message having a second frame length longer than the first frame length (frame generator places user data at multiples of 32 bits into frames, Col. 3, Lines 22-30), a multiplexer for combining the second frame message with the first frame message (Frame Generator includes a multiplexer to place original data with user data or signaling data, Col. 3, Lines 22-30, Fig. 2, Item 46), and a spreader for spreading an output of the multiplexer (multiplexer shows two outputs from one input indicating a spreading function, Fig. 2, Item 46), however Odenwalder et al. fails to disclose replacing the second frame message with the first frame message.

In an analogous art, Rikkinen et al. discloses replacing a frame with different sized slots and different data (Col. 5, Lines 41-56), which enables modularity of the frame.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to replace one set of data with another set of data in order to optimize the available bandwidth.

5. Regarding Claim 2, Odenwalder et al. further discloses the first frame message and the second frame message are multiplexed when the first frame message is generated during transmission of the second frame message (signaling data queued for transmission then signaling data is multiplexed with current transmission of frames including user data, Col. 3, Lines 19-30).

6. Regarding Claim 3, Odenwalder et al. further teaches the multiplexer intermixingly outputs the message (Col. 6, Lines 48-50), however Odenwalder et al. fails

Art Unit: 2617

to disclose outputting the message in a sequence of a portion of the second frame message, the replaced first frame message, and a remaining portion of the second frame message.

Examiner takes official notice that outputting a message and frames in any specific order or sequence to be well known in the art.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to output the frames messages in the sequence in order to prioritize the transmission of the second message.

7. Regarding Claim 4, Odenwalder et al. further teaches the multiplexer intermixingly outputs the message (Col. 6, Lines 48-50), however Odenwalder et al. fails to disclose outputting the message in a sequence the replaced first frame message and the second frame message from which a portion corresponding to the first frame message is deleted.

Examiner takes official notice that outputting a message and frames in any specific order or sequence to be well known in the art.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to output the frames messages in the sequence in order to prioritize the transmission of the first frame message.

8. Regarding Claim 5, Odenwalder et al. further discloses a power controller for increasing a transmission power of the remaining portion of the second frame message, following the replaced first frame message, to be higher than that of the first frame message (Col. 13, Lines 5-15, Fig. 2, Item 44).

9. Regarding Claim 6, Odenwalder et al. further discloses the first frame message has a length of 32 bits and the second frame message (user data) has a frame length of 20ms (Col. 3, Lines 18-30), however Odenwalder et al. fails to disclose the first frame message has a length of 5ms.

Examiner takes official notice that it is well known in the art that a frame can have any length and is only restricted by the system on which the frame is transported.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to use a first frame message frame length of 5ms as a design choice when a 5ms frame is needed.

10. Regarding Claim 7, Odenwalder et al. further discloses the second frame generator comprises a CRC generator for generating CRC bits according to the second input data of the second frame length (Col.3, Lines 31-34, Fig. 2, Item 32), a tail bit generator for generating tail bits and adding the generated tail bits to an output of the CRC generator (Col. 3, Lines 33-39, Fig. 2, Item 34), a channel encoder for encoding the tail bit added second frame data at a predefined coding rate (Col. 3, Lines 42-52, Fig. 2, Item 36), and an interleaver for interleaving the encoded frame message by the second frame length (Col. 3, Lines 59-62, Fig. 2, Item 42).

11. Regarding Claim 8, Odenwalder et al. further discloses the interleaver uniformly distribute symbols generated by encoding one data bit over the respective durations of the whole frame (Col. 3, Lines 59-62).

12. Regarding Claim 10, Odenwalder et al. further discloses the spreader comprises an orthogonal code spreader for spreading the frame message output from the

multiplexer with an orthogonal code for a dedicated control channel (orthogonal Walsh code, Col. 4, Lines 24-30), and a pseudo-random noise spreader for spreading an output of the orthogonal code spreader with a PN sequence (Col. 4, Lines 44-50).

13. Regarding Claim 11, Odenwalder et al. discloses data transmission including encoding a first input data of a first bit stream to generate a first frame message having a first frame length (frame generator places signaling data of 32 bits into frames, Fig. 2), encoding second input data (user data) of a second bit stream longer than said first bit stream to generate a second frame message having a second frame length longer than said first frame length (frame generator places user data at multiples of 32 bits into frames, Col. 3, Lines 22-30), combining a portion of the second frame message with the first frame message (Frame Generator includes a multiplexer to place original data with user data or signaling data, Col. 3, Lines 22-30, Fig. 2, Item 46), and transmitting the first frame message in place of the replaced portion of the second frame message (first and second frame are transmitted, Col. 6, Lines 48-50), however Odenwalder et al. fails to disclose replacing a portion of the second frame message with the first frame message.

In an analogous art, Rikkinen et al. discloses replacing a frame with different sized slots and different data (Col. 5, Lines 41-56), which enables modularity of the frame.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to replace one set of data with another set of data in order to optimize the available bandwidth.

Art Unit: 2617

14. Regarding Claim 12, Odenwalder et al. further discloses the first frame message and the second frame message are multiplexed when the first frame message is generated during transmission of the second frame message (signaling data queued for transmission then signaling data is multiplexed with current transmission of frames including user data, Col. 3, Lines 19-30).

15. Regarding Claim 13, Odenwalder et al. further teaches the multiplexer intermixingly outputs the message (Col. 6, Lines 48-50), however Odenwalder et al. fails to disclose outputting the message in a sequence of a portion of the second frame message, the replaced first frame message, and a remaining portion of the second frame message.

Examiner takes official notice that outputting a message and frames in any specific order or sequence to be well known in the art.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to output the frames messages in the sequence in order to prioritize the transmission of the second message.

16. Regarding Claim 14, Odenwalder et al. further teaches the multiplexer intermixingly outputs the message (Col. 6, Lines 48-50), however Odenwalder et al. fails to disclose outputting the message in a sequence the replaced first frame message and the second frame message from which a portion corresponding to the first frame message is deleted.

Examiner takes official notice that outputting a message and frames in any specific order or sequence to be well known in the art.



17. It would have been obvious to one having ordinary skill in the art at the time of invention was made to output the frames messages in the sequence in order to prioritize the transmission of the first frame message.

18. Regarding Claim 15, Odenwalder et al. further discloses a power controller for increasing a transmission power of the remaining portion of the second frame message, following the replaced first frame message, to be higher than that of the first frame message (Col. 13, Lines 5-15, Fig. 2, Item 44).

19. Regarding Claim 16, Odenwalder et al. further discloses the first frame message has a length of 32 bits and the second frame message (user data) has a frame length of 20ms (Col. 3, Lines 18-30), however Odenwalder et al. fails to disclose the first frame message has a length of 5ms.

Examiner takes official notice that it is well known in the art that a frame can have any length and is only restricted by the system on which the frame is transported.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to use a first frame message frame length of 5ms as a design choice when a 5ms frame is needed.

20. Regarding Claim 19, Odenwalder et al. further discloses a power controller for increasing a transmission power of the remaining portion of the second frame message, following the replaced first frame message, to be higher than that of the first frame message (Col. 13, Lines 5-15, Fig. 2, Item 44).

21. Regarding Claim 20, Odenwalder et al. further discloses the second frame is generated by generating CRC bits according to the second input data of the second

Art Unit: 2617

frame length (Col.3, Lines 31-34, Fig. 2, Item 32), generating tail bits and adding the generated tail bits to an output or second data from the CRC generator (Col. 3, Lines 33-39, Fig. 2, Item 34), encoding the tail bit added second frame data at a predefined coding rate (Col. 3, Lines 42-52, Fig. 2, Item 36), and interleaving the encoded frame message by the second frame length (Col. 3, Lines 59-62, Fig. 2, Item 42).

22. Regarding Claim 21, Odenwalder et al. further discloses symbols generated by encoding one data bit over the respective durations of the whole frame are uniformly distributed (Col. 3, Lines 59-62).

23. Regarding Claim 23, Odenwalder et al. further discloses spreading the frame message output from the multiplexer with an orthogonal code for a dedicated control channel (orthogonal Walsh code, Col. 4, Lines 24-30), and spreading an output of the orthogonal code spreader with a PN sequence (Col. 4, Lines 44-50).

24. Regarding Claim 24, Odenwalder et al. discloses a transmission device including a despreader for despreading a received signal (Col. 7, Lines 3-39, Fig. 5), a first message receiver for deinterleaving the despread signal by the first frame length and decoding the deinterleaved signal to generate a first frame message (SR receiver, Col. 7, Lines 56-62, Fig. 6), and a second message receiver for deinterleaving the despread signal by the second frame length and decoding the deinterleaved signal to generate a second frame message (UR receiver, Col. 7, Lines 56-62, Fig. 6).

25. Regarding Claim 25, Odenwalder et al. further discloses the first frame message and the second frame message are multiplexed when the first frame message is generated during transmission of the second frame message (signaling data queued for

transmission then signaling data is multiplexed with current transmission of frames including user data, Col. 3, Lines 19-30).

26. Regarding Claim 26, Odenwalder et al. discloses a transmission device including deinterleaving the despread signal by the first frame length and decoding the deinterleaved signal to generate a first frame message (SR receiver, Col. 7, Lines 56-62, Fig. 6), and deinterleaving the despread signal by the second frame length and decoding the deinterleaved signal to generate a second frame message (UR receiver, Col. 7, Lines 56-62, Fig. 6).

27. Regarding Claim 27, Odenwalder et al. further discloses the first frame message and the second frame message are multiplexed when the first frame message is generated during transmission of the second frame message (signaling data queued for transmission then signaling data is multiplexed with current transmission of frames including user data, Col. 3, Lines 19-30).

28. Regarding Claim 28, Odenwalder et al. further discloses a power controller for increasing a transmission power of the remaining portion of the second frame message, following the replaced first frame message, to be higher than that of the first frame message (Col. 13, Lines 5-15, Fig. 2, Item 44).

29. Regarding Claim 29, Odenwalder et al. further discloses increasing a transmission power of the remaining portion of the second frame message, following the replaced first frame message, to be higher than that of the first frame message (Col. 13, Lines 5-15, Fig. 2, Item 44).

30. Regarding Claim 30, Odenwalder et al. further discloses a power controller for increasing a transmission power of the remaining portion of the second frame message, following the replaced first frame message, following the inserted first frame message (Col. 13, Lines 5-15, Fig. 2, Item 44).

### ***Double Patenting***

31. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

32. Claims 1-30 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3, 5-7, 9, 11-16, 19-21, and 24-34 of U.S. Patent No. 6768728. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1-30 of the present application are a

broader version of claims 1-3, 5-7, 9, 11-16, 19-21, and 24-34 of US Patent 6768728 as follows.

33. Claim 1 of U.S. Patent No. 6768728 includes all of the limitations of claim 1 of the instant application as follows:

A transmission device for a code division multiple access (CDMA) communication system, comprising: a first message generator for encoding first input data of a first bit stream to generate a first frame message having a first frame length; a second message generator for encoding second input data of a second bit stream longer than the first bit stream to generate a second frame message having a second frame length longer than the first frame length; a multiplexer for replacing a portion of the second frame message with the first frame message; and a spreader for spreading an output of the multiplexer.

However, claim 1 also includes the following limitations: wherein one of the following occurs: (i) the remaining portion of the second frame message, following the first frame message, is discarded, (ii) said second frame message is delayed as a result of said replacement, and (iii) the replaced portion of said second frame message is not transmitted, such that a tail portion of said second frame message is transmitted in an undelayed fashion.

Nonetheless, the removal of said limitations from claim 1 of U.S. Patent No. 6768728 makes claim 1 a broader version of claim 1 of the present application. Therefore, since omission of an element and its function in a combination where the remaining elements perform the same function as before involves only routine skill in

Art Unit: 2617

the art (*In re Karlson*, 136 USPQ 184.) claim 1 is not patentably distinct from claim 1 of the present application.

34. Claim 2 of U.S. Patent No. 6768728 includes all of the limitations of claim 2 of the instant application as follows:

The transmission device as claimed in claim 1, wherein the first frame message and the second frame message are multiplexed when the first frame message is generated during transmission of the second frame message.

Therefore claim 2 is not patentably distinct from claim 2 of the present application.

35. Claim 5 of U.S. Patent No. 6768728 includes all of the limitations of claim 3 of the instant application as follows:

The transmission device as claimed in claim 1, wherein the multiplexer intermixingly outputs, in sequence, a portion of the second frame message, the replaced first frame message and a remaining portion of the second frame message.

Therefore claim 5 is not patentably distinct from claim 3 of the present application.

36. Claim 7 of U.S. Patent No. 6768728 includes all of the limitations of claim 4 of the instant application as follows:

The transmission device as claimed in claim 1, wherein the multiplexer intermixingly outputs, in sequence, the replaced first frame message and the second frame message from which a portion corresponding to the first frame message is deleted.

Therefore claim 7 is not patentably distinct from claim 4 of the present application.

37. Claim 6 of U.S. Patent No. 6768728 includes all of the limitations of claim 5 of the instant application as follows:

The transmission device as claimed in claim 5, further comprising a power controller for increasing a transmission power of the remaining portion of the second frame message, following the replaced first frame message, to be higher than that of the first frame message.

Therefore claim 6 is not patentably distinct from claim 5 of the present application.

38. Claim 3 of U.S. Patent No. 6768728 includes all of the limitations of claim 6 of the instant application as follows:

The transmission device as claimed in claim 1, wherein the first frame message has a frame length of 5 ms and the second frame message has a frame length of 20 ms.

Therefore claim 3 is not patentably distinct from claim 6 of the present application.

39. Claim 11 of U.S. Patent No. 6768728 includes all of the limitations of claim 7 of the instant application as follows:

The transmission device as claimed in claim 1, wherein the second frame message generator comprises: a cyclic redundancy check (CRC) generator for generating CRC bits according to the second input data of the second frame length; a

Art Unit: 2617

tail bit generator for generating tail bits and adding the generated tail bits to an output of the CRC generator; a channel encoder for encoding the tail bit-added second frame data at a predefined coding rate; and an interleaver for interleaving the encoded frame message by the second frame length.

Therefore claim 11 is not patentably distinct from claim 7 of the present application.

40. Claim 12 of U.S. Patent No. 6768728 includes all of the limitations of claim 8 of the instant application as follows:

The transmission device as claimed in claim 11, wherein the interleaver uniformly distribute symbols generated by encoding one data bit over the respective durations of the whole frame.

Therefore claim 12 is not patentably distinct from claim 8 of the present application.

41. Claim 13 of U.S. Patent No. 6768728 includes all of the limitations of claim 9 of the instant application as follows:

The transmission device as claimed in claim 12, wherein the interleaver is designed according to a delete matrix given by ##EQU2##

Therefore claim 13 is not patentably distinct from claim 9 of the present application.

42. Claim 9 of U.S. Patent No. 6768728 includes all of the limitations of claim 10 of the instant application as follows:



The spreader as claimed in claim 1, wherein the transmitter comprises: an orthogonal code spreader for spreading the frame message output from the multiplexer with an orthogonal code for a traffic channel; and a PN spreader for spreading an output of the orthogonal code spreader with a PN sequence.

Therefore claim 9 is not patentably distinct from claim 10 of the present application.

43. Claim 14 of U.S. Patent No. 6768728 includes all of the limitations of claim 11 of the instant application as follows:

A data transmission method in a wireless communication system, comprising the steps of: encoding first input data of a first bit stream to generate a first frame message having a first frame length; encoding second input data of a second bit stream longer than said first bit stream to generate a second frame message having a second frame length longer than said first frame length; replacing a portion of the second frame message with the first frame message; and transmitting the first frame message in place of the replaced portion of the second frame message

However, claim 14 also includes the following limitations: wherein one of the following occurs: (i) the remaining portion of the second frame message, following the first frame message, is discarded, (ii) said second frame message is delayed as a result of said replacement, and (iii) the replaced portion of said second frame message is not transmitted, such that a tail portion of said second frame message is transmitted in an undelayed fashion.

Nonetheless, the removal of said limitations from claim 14 of U.S. Patent No. 6768728 makes claim 14 a broader version of claim 11 of the present application. Therefore, since omission of an element and its function in a combination where the remaining elements perform the same function as before involves only routine skill in the art (*In re Karlson*, 136 USPQ 184.) claim 14 is not patentably distinct from claim 11 of the present application.

44. Claim 21 of U.S. Patent No. 6768728 includes all of the limitations of claim 12 of the instant application as follows:

The data transmission method as claimed in claim 14, wherein the first frame message and the second frame message are multiplexed when the first frame message is generated during transmission of the second frame message.

Therefore claim 21 is not patentably distinct from claim 12 of the present application.

45. Claim 15 of U.S. Patent No. 6768728 includes all of the limitations of claim 13 of the instant application as follows:

The data transmission method as claimed in claim 14, wherein a portion of the second frame message, the first frame message and a remaining portion of the second frame message are intermixingly output in sequence, in said replacing step.

Therefore claim 15 is not patentably distinct from claim 13 of the present application.

46. Claim 19 of U.S. Patent No. 6768728 includes all of the limitations of claim 14 of the instant application as follows:

The data transmission method as claimed in claim 14, wherein the first frame message and the second frame message from which a portion corresponding to the first frame message is deleted, are intermixingly output in sequence, in said replacing step.

Therefore claim 19 is not patentably distinct from claim 14 of the present application.

47. Claim 16 of U.S. Patent No. 6768728 includes all of the limitations of claim 15 of the instant application as follows:

The data transmission method as claimed in claim 15, further comprising the step of increasing a transmission power of the remaining portion of the second frame message, following the first frame message, to be higher than that of the first frame message.

Therefore claim 16 is not patentably distinct from claim 15 of the present application.

48. Claim 27 of U.S. Patent No. 6768728 includes all of the limitations of claim 16 of the instant application as follows:

The data transmission method as claimed in claim 14, wherein the first frame message has a frame length of 5 ms and the second frame message has a frame length of 20 ms.

Therefore claim 27 is not patentably distinct from claim 16 of the present application.

49. Claim 28 of U.S. Patent No. 6768728 includes all of the limitations of claim 17 of the instant application as follows:

The data transmission method as claimed in claim 27, wherein a portion of the second frame message is deleted to insert the first frame message into the deleted portion for a second duration, and the remaining portion of the second frame message is output for third and fourth durations, in said replacing step.

Therefore claim 28 is not patentably distinct from claim 17 of the present application.

50. Claim 29 of U.S. Patent No. 6768728 includes all of the limitations of claim 18 of the instant application as follows:

The data transmission method as claimed in claim 28, wherein a portion of the second frame message is deleted to insert the first frame message in the deleted portion for a first duration, and the remaining portion of the second frame message is output for second, third and fourth durations, in said replacing step.

Therefore claim 29 is not patentably distinct from claim 18 of the present application.

51. Claim 30 of U.S. Patent No. 6768728 includes all of the limitations of claim 19 of the instant application as follows:

The data transmission method as claimed in claim 29, further comprising the step of increasing the transmission power of the remaining portion of the second frame message, following the inserted first frame message.

Therefore claim 30 is not patentably distinct from claim 19 of the present application.

52. Claim 24 of U.S. Patent No. 6768728 includes all of the limitations of claim 20 of the instant application as follows:

The data transmission method as claimed in claim 14, wherein the second frame message generation step comprises the steps of: generating CRC bits according to second data input of the second frame length; generating tail bits and adding the generated tail bits to the CRC bit-added second data; encoding the tail bit-added second frame data at a predefined coding rate; and interleaving symbols of the encoded second frame data by the second frame length.

Therefore claim 24 is not patentably distinct from claim 20 of the present application.

53. Claim 25 of U.S. Patent No. 6768728 includes all of the limitations of claim 21 of the instant application as follows:

The data transmission method as claimed in claim 24, wherein symbols generated by encoding one data bit are uniformly distributed over the respective durations of the whole frame, in said interleaving step.

Therefore claim 25 is not patentably distinct from claim 21 of the present application.

54. Claim 26 of U.S. Patent No. 6768728 includes all of the limitations of claim 22 of the instant application as follows:

The data transmission method as claimed in claim 25, wherein the symbols are distributed according to a delete matrix given by ##EQU3##

Therefore claim 26 is not patentably distinct from claim 22 of the present application.

55. Claim 22 of U.S. Patent No. 6768728 includes all of the limitations of claim 23 of the instant application as follows:

The data transmission method as claimed in claim 21, wherein the transmission step comprises the steps of: spreading the frame message with an orthogonal code for a traffic channel; and spreading an orthogonal spread signal with a PN sequence.

Therefore claim 22 is not patentably distinct from claim 23 of the present application.

56. Claim 32 of U.S. Patent No. 6768728 includes all of the limitations of claim 24 of the instant application as follows:

A despreader for despread a received signal; a first message receiver for deinterleaving the despread signal by the first frame length and decoding the deinterleaved signal to generate a first frame message; and a second message receiver for deinterleaving the despread signal by the second frame length and decoding the deinterleaved signal to generate a second frame messages.

However, claim 32 also includes the following limitations: A CDMA communication system comprising: a transmission device including; a second message generator for encoding second data input of a second bit stream to generate a second frame message having a second frame length; a first message generator for encoding first data input of a first bit stream shorter than the second bit stream upon reception of the first data during reception of the second data, to generate a first frame message

Art Unit: 2617

having a first frame length shorter than the second frame length; a multiplexer for replacing the first frame message with a corresponding portion of the second frame message; a spreader for spreading an output of the multiplexer; a reception device including; wherein one of the following occurs: (i) the remaining portion of the second frame message, following the first frame message is discarded, (ii) said second frame message is delayed as a result of said replacement and (iii) the replaced portion of said second frame message is not transmitted, such that a tail portion of said second frame message is transmitted in an undelayed fashion.

Nonetheless, the removal of said limitations from claim 32 of U.S. Patent No. 6768728 makes claim 32 a broader version of claim 24 of the present application. Therefore, since omission of an element and its function in a combination where the remaining elements perform the same function as before involves only routine skill in the art (*In re Karlson*, 136 USPQ 184.) claim 32 is not patentably distinct from claim 24 of the present application.

57. Claim 33 of U.S. Patent No. 6768728 includes all of the limitations of claim 25 of the instant application as follows:

The CDMA communication system as claimed in claim 32, wherein the multiplexer multiplexes the first frame message and the second frame message when the first frame message is generated during transmission of the second frame message.

Therefore claim 33 is not patentably distinct from claim 25 of the present application.

58. Claim 34 of U.S. Patent No. 6768728 includes all of the limitations of claim 26 of the instant application as follows:

Deinterleaving the despread signal by the first frame length and decoding the deinterleaved signal to generate a first frame message; and deinterleaving the despread signal by the second frame length and decoding the deinterleaved signal to generate a second frame message.

However, claim 34 also includes the following limitations: A data transceiving method in a spread spectrum communication system, comprising the steps of: encoding second data input of a second bit stream to generate a second frame message having a second frame length; encoding first data input of a first bit stream shorter than the second bit stream to generate a first frame message having a first frame length shorter than the second frame length; inserting the first frame message in a corresponding portion of the second frame message; spreading the frame messages; despreading a received signal; wherein one of the following occurs: (i) the remaining portion of the second frame message, following the first frame message, is discarded, (ii) said second frame message is delayed as a result of said replacement, and (iii) the replaced portion of said second frame message is not transmitted, such that a tail portion of said second frame message is transmitted in an undelayed fashion.

Nonetheless, the removal of said limitations from claim 34 of U.S. Patent No. 6768728 makes claim 34 a broader version of claim 26 of the present application. Therefore, since omission of an element and its function in a combination where the remaining elements perform the same function as before involves only routine skill in



the art (*In re Karlson*, 136 USPQ 184.) claim 34 is not patentably distinct from claim 26 of the present application.

59. Claim 35 of U.S. Patent No. 6768728 includes all of the limitations of claim 27 of the instant application as follows:

The data exchanging method as claimed in claim 34, wherein the first frame message and the second frame message are multiplexed when the first frame message is generated during transmission of the second frame message.

Therefore claim 35 is not patentably distinct from claim 27 of the present application.

60. Claim 8 of U.S. Patent No. 6768728 includes all of the limitations of claim 28 of the instant application as follows:

The transmission device as claimed in claim 7, further comprising a power controller for increasing a transmission power of the remaining portion of the second frame message, following the replaced first frame message, to be higher than that of the first frame message.

Therefore claim 8 is not patentably distinct from claim 28 of the present application.

61. Claim 20 of U.S. Patent No. 6768728 includes all of the limitations of claim 29 of the instant application as follows:

The data transmission method as claimed in claim 19, further comprising the step of increasing a transmission power of the remaining portion of the second frame

Art Unit: 2617

message, following the first frame message, to be higher than that of the first frame message.

Therefore claim 20 is not patentably distinct from claim 29 of the present application.

62. Claim 31 of U.S. Patent No. 6768728 includes all of the limitations of claim 30 of the instant application as follows:

The data transmission method as claimed in claim 29, further comprising the step of increasing the transmission power of the remaining portion of the second frame message, following the inserted first frame message.

Therefore claim 31 is not patentably distinct from claim 30 of the present application.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Lim whose telephone number is (571) 270-1210. The examiner can normally be reached on Mon-Thurs 9:00am-4:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on (571)272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2617

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